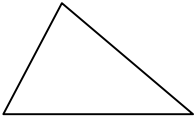
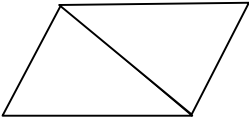


LABSHEET 4B

Patterns in Polygons (Use with Question 1 1 on page 283.)

Directions: Complete table below and answer questions 1 - 3 below.

Name of Polygon	Number of Sides	Draw the Polygon (Hint: add a triangle to the shape above it and the new triangle must share a side with the new shape)	Number of Triangles	Sum of the measure of the interior angles
Triangle	3		1	
Quadrilateral	4			
Pentagon				
Hexagon				

1. How is the number of triangles in each polygon related to the number of sides of the polygon?

2. How can you find the sum of the measures of the interior angles of any convex polygon?

3. Find the sum of the interior angles of each polygon.

A. an octagon

B. 12-sided figure

C. 23-sided figure

4. The interior angles of a *regular polygon* are congruent.

A. What is the measure of one interior angle of a regular hexagon?

B. What is the measure of one interior angle of a regular pentagon?

5. Write an expression that could be used to find the measure of one interior angle of a regular polygon with  $n$  sides.

6. What did you notice about the pentagon and hexagon in #10c? (HINT: Find the sum of the angle measures where the vertices of more than one polygon touch.)